



ABSTRACT OF THE DISCLOSURE

A method of cross-sectional processing and observation comprises a first step of processing at least one predetermined area in a surface of a sample to form a target cross-section by etching the at least one predetermined area with a focused energy beam using a focused energy beam irradiating unit in a vacuum chamber. The method further comprises a second step of observing the target cross-section by scanning the target cross-section with a probe of a scanning probe microscope in the vacuum chamber and detecting a physical quantity produced between the probe and the target cross-section.